Aug. 15, 1933. J. R. KNOPF 1,923,036

CONVEYER MECHANISM

Filed Feb. 1, 1928

Fig. 1.

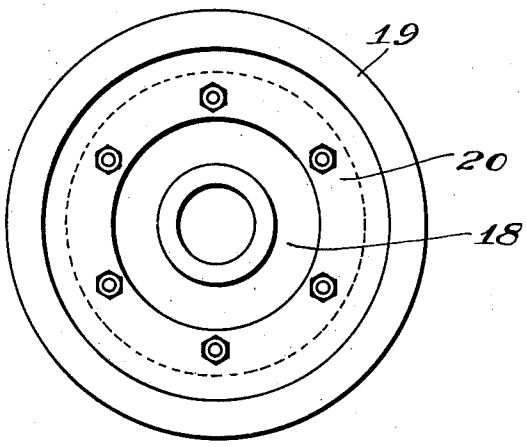
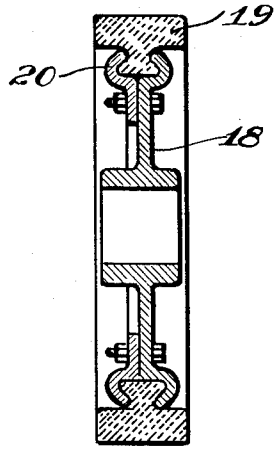


Fig. 2.



WITNESSES

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CONVEYER MECHANISM

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2 Claims. (Cl. 263—8)

This invention relates to annealing or normalizing furnaces for treating sheets or plates, more particularly to improvements in the conveyer mechanism for advancing the sheet plate through the heating furnace.

In the handling of sheet material such as sheet or plate for heat treatment or normalizing, it has been found that the portion of the conveyer mechanism making contact with the sheets has a tendency to mar the surface of the sheets when heated to suitable treating temperatures. The contacting portions of the conveyer mechanism, as heretofore constructed, are made of high temperature resisting alloys and when the sheets are heated to the desired treating temperature the alloy of the conveyer injures the sheet material by marring the surface of the highly polished metal.

In some instances the alloy apparently picks up small pieces of scale and eventually becomes roughened resulting in injury to the sheet surface and, in other cases, the nickel in the alloy forms a nickel compound such as nickel sulphide which is much greater in volume than the nickel from which it is formed and which roughens the surface of the alloy causing injury to the surface of the sheet.

I have discovered that these difficulties may be obviated by the use of non-metallic bodies of refractory material on the portion of the conveyer with which the sheet material makes contact when conducted through the furnace. By the utilization of such refractory contacting members, the sheet or plate may be treated to very high temperatures without pitting or scaling due to contact with the conveyer parts.

Figs. 1 and 2 are a side elevational view and a cross sectional view of a disc type conveyer embodying the invention.

In Figs. 1 and 2 I have applied the invention to a disc type conveyer in which the discs 18 may be formed of suitable alloy and as in the form illustrated a rim 19 of refractory material may be secured thereto by a clamping ring 20 which is bolted to the disc wheel structure. The rim 19 may be one continuous ring or assembled segments which may or may not abut with adjacent segments as desired. A plurality of such refractory discs are assembled in spaced relation on a shaft not shown and discs on adjacent shafts, may be alternately spaced in a well known manner to provide a suitable conveyer surface.

Refractory rims when formed of kaolin or alundum or other suitable composite materials, are of sufficient strength to resist breakage in the ordinary use of transferring sheet plate through a furnace but in case of breakage they are readily accessible for inspection and replacement, as is obvious from the illustration in Fig. 1 of the drawing.

A conveyer for handling sheet plate provided with refractory rims as herein described substantially eliminates the damage to the sheet plate which frequently resulted in the employment of conveyers as heretofore constructed when the sheet material is treated at relatively high temperatures.

Although I have described a specific embodiment of my invention it will be obvious to those skilled in the art that various changes may be made in the form and design of the refractory knobs and in the manner of securing them to the conveyer members without departing from the principles herein set forth.

I claim:

1. A roller for supporting material in a heating apparatus comprising a body portion and a sectional tire on the rim thereof said tire being made up of a plurality of arcuate sections of refractory material.

2. A roller for a normalizing furnace comprising a relatively narrow body portion, a tire made up of a plurality of arcuate sections, and means for clamping the sections of the tire on the body portion including a demountable element.

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